

VOLUME XXIX

NUMBER 2



STATE OF CALIFORNIA
DEPARTMENT OF AGRICULTURE
BULLETIN

SACRAMENTO, CALIFORNIA
APRIL MAY JUNE 1940

ERIOPHYID STUDIES IX

H. H. KEIFER

State Department of Agriculture

ERIOPHYID Studies VIII appeared in the Bulletin of the State Department of Agriculture, Vol. 29, No. 1, p. 21, Jan., Feb., Mar., 1940. The present installment adds four species to those figured in this series.

Phytoptus avellanae Nal.

Plate 136

Vallot, Mem. Ac. Dijon, p. 189, 1836 (*Acarus pseudogallarum*)
Nalepa, SB. Ak. Wiss. Wien, Vol. 93, p. 126, 1889 (*Phytoptus avellanae*, orig. descr.)
Essig, Insects W.N. Am., p. 47, 1926 (*Eriophyes avellanae*)
Masse, Bul. Ent. Res., Vol. 21, p. 166, 1930 (*Eriophyes avellanae*)

Female 220-260 μ long, 45 μ thick, light yellow, wormlike. Rostrum 23.5 μ long, bent down. Shield 26.5 μ long, 34 μ wide, admedian lines distinct, other markings obscure except lateral granulations; frontolateral setae 14 μ apart, 5.5 μ long; dorsal tubercles 14.5 μ apart, ahead of rear margin; dorsal setae 10.5 μ long, projecting forward. Forelegs 35 μ long, tibia 6 μ long, tarsus 9.5 μ long, claw 12.5 μ long, knobbed, featherclaw 4-5 rayed. Hindlegs 31.5 μ long, patellar seta laterally placed, tibia 4.5 μ long, tarsus 7.5 μ long, claw 12 μ long. Sternal line enlarged posteriorly, coxal seta III 52 μ long. Abdomen with about 70 rings, both ventrad and dorsad reduction in ring number, the last 8 or 10 rings partly or entirely smooth above, the microtubercles pointed. Subdorsal seta 36 μ long, on about ring 10. Lateral seta 17.5 μ long, on about ring 9; first ventral seta 17.5 μ long, on about ring 22; second ventral 12 μ long, on about ring 38; third ventral 25 μ long, 7 rings from rear, accessory seta present. Female genitalia 26.5 μ wide, 11.5 μ long, coverflap smooth except for short basal lines, seta 25 μ long, glands clavate.

Male not studied.

Locality: Paradise, Butte County, California. **Collected** May 16, 1939, by Dr. A. E. Davey, and on several succeeding dates by the writer. **Host:** *Corylus avellanae* L. Du Chilly variety. **Relation to Host:** The mites cause spring "big-bud" of the terminal buds; the immature forms spend the summer appressed to the underside of the leaves along the small veins. Adult mites can be found in the buds throughout the summer. The adult structure is principally characterized by the subdorsal abdominal setae, the anterior shield setae, the 4-5 rayed featherclaw, the sternal line and the female genitalia. The internal genitalia, as has been mentioned under *Phytoptus corniseminis*, is similar to that of all species so far examined that have subdorsal abdominal setae.

The species *avellanae* was set as the genotype of *Phytoptus* in Eriophyid Studies II, Bul. Cal. Dept. Agr., Vol. 27, No. 3, p. 301, Sept. 1938.

The nymph of *avellanae* is a most remarkable creature. It is somewhat flattened, with the cephalothorax protruding anteriorly in two humps. The beak is very short. The tergites are much broader than the more numerous sternites, and project spine-like laterally. This body shape enables the individuals to remain appressed to the leaves after the manner of soft scale insects. The structure of this nymph seems utterly inconsistent with the adult since on conventional characters the nymph belongs to the subfamily Phyllocoptinae and the

adult to the subfamily Eriophyinae. If moulting individuals with typical *avellanae* emerging had not been seen under the microscope the true identity of this mite could not have been determined.

Eriophyes swezeyi Keifer, new species

Plate 137

Female 150 μ long, 40 μ thick, wormlike, light yellow (?). Rostrum 22 μ long, somewhat downcurved. Shield 26 μ long, 32 μ wide, median line anchor-shaped basally, admedians curved, first submedians forked before tubercles; sides granular; dorsal tubercles 25 μ apart, on rear margin; dorsal setae 23 μ long, projecting backward. Forelegs 26 μ long, tibia 6 μ long, tarsus 6 μ long, claw 6 μ long, knobbed, featherclaw 4 rayed. Hindlegs 24 μ long, tibia 4.5 μ long, tarsus 5.5 μ long, claw 7.5 μ long. Sternal line long. Coxal setae I minute and farther apart than setae II. Abdomen with about 75 rings, some ventrad reduction in ring number, microtuberculate, but with tubercles much weaker dorsally to the rear; tubercles slightly acuminate. Lateral seta 4 μ long, on about ring 9; first ventral 40 μ long, on about ring 24; second ventral 3.5 μ long, on about ring 40; third ventral 18.5 μ long, on about ring 5 from rear; accessory seta absent. Female genitalia 19 μ wide, 11.5 μ long, coverflap with about 14 furrows, seta 4 μ long.

Male not seen.

Type locality: Makua, Oahu, T. H. **Collected** February 22, 1940 by O. H. Swezey. **Host:** *Maba sandwicensis* A. DC. **Relation to host:** The mites cause small wart-like growths on the undersides of the leaves that are densely covered with white hair. **Type slide**, so designated, with the above data. **Paratype slides**, two in number, as above. This mite is characterized by the anchor-shaped median shield line, the shape of the fore-tibia with prominent setiferous tubercle, the minute and widespread anterior coxal setae, and the reduction in posterior tuberculation. I take pleasure in naming this species for Mr. O. H. Swezey, Consulting Entomologist of the Hawaiian Sugar Planters' Association.

Phyllocoptes calumi Keifer, new species

Plate 138

Female 200-220 μ long, about 65 μ thick, spindleform, light yellow. Rostrum 23.5 μ long, projecting down. Shield 40 μ long, 40 μ wide, an open network with granulations to the rear and laterally; slightly overlying rostrum base; dorsal tubercles 21 μ apart, but little ahead of rear margin; dorsal setae 100 μ long, projecting up and caudad. Forelegs 42 μ long, tibia 10 μ long, tarsus 11 μ long, claw 6.5 μ long, knobbed, featherclaw 2 rayed. Hindlegs 38 μ long, tibia 8 μ long, tarsus 10 μ long, claw 6.5 μ long. Sternal line slightly forked. Abdomen completely microtuberculate, a little ventrad increase in ring number; tergites 65-70; sternites 70-75. Lateral seta 21 μ long, on about sternite 8; first ventral 38 μ long, on about sternite 24; second ventral 19 μ long, on about sternite 41; third ventral 40.5 μ long, on about sternite 6 from rear; accessory seta present. Female genitalia 32 μ wide, 17.5 μ long, coverflap smooth, seta 15 μ long.

Male not studied.

Type locality: San Mateo: California. **Collected** June 18, 1939 by the writer. **Host:** *Ulmus (campestris?)*. **Relation to host:** The mites are vagrants on the underside of the young terminal leaves. **Type slide**, so designated, with the above data. **Paratype slides**, two in number, as above. This mite is correlated with *Phyllocoptes mastigophorus* Nal., but the shield pattern and direction of the setae are different. The species was also collected in San Francisco, August 19, 1939 by the writer.

Calepitrimerus muesebecki, Keifer, new species

Plate 139

Female 180-205 μ long, 60 μ wide, 48 μ thick, spindleform, light yellow color (?). Rostrum 34 μ long, large, downcurved; suboral plate granular. Shield

47 μ long, 47 μ wide, anterior lobe blunt and irregular in dorsal view, median line indistinct, admedian lines complete, somewhat sinuate, one submedian line present; dorsal tubercles 29 μ apart; dorsal setae 6 μ long, spine-like pointing up and outward. Forelegs 34 μ long, tibia 8.5 μ long, foretibial seta missing, tarsus 8 μ long, claw 8.7 μ long, tapering, knobbed, featherclaw 8 or 9 rayed. Hindlegs 33 μ long, tibia 7 μ long, tarsus 7 μ long, claw 8.75 μ long. Sternal line short, hardly distinguishable. Abdomen with three dorsal wax-bearing ridges, the central ridge extending to about the 46th tergite; the wax-bearing areas consisting of close-set tubercles; dorsum not microtuberculate except on ridges, sternites with fine microtubercles; about 67 tergites; sternites about 85. Lateral seta 12 μ long, on about sternite 9; first ventral about 40 μ long, on about sternite 26; second ventral about 50 μ long, on about sternite 48; third ventral 32 μ long, on about sternite 9 from rear; accessory seta absent. Female genitalia 23.5 μ wide, 14.5 μ long, coverflap with about 16-18 ridges, seta 32 μ long.

Male 170-190 μ long, 50 μ wide, 40 μ thick.

Type locality: Fort Pierce, Florida. **Collected** January 12, 1940 by M. R. Osburn. **Host:** *Persea americana* Mill, avocado. **Relation to hosts:** The mites are presumably leaf vagrants, but no data on this is available. **Type slide:** so designated, with the above data and bearing U. S. Bureau of Entomology accession #40-1095. **Paratype slides,** five in number, as above. The type slide is the property of the U. S. Bureau of Entomology. This species of *Calepitrimerus* is distinguished by the short outwardly directed dorsal setae, the shield pattern, the absence of a foretibial seta, and the long second ventral seta. The waxy ridges are also found on certain other species in both *Calepitrimerus* and *Epitrimerus*. I take pleasure in naming this mite for Dr. C. F. W. Muesebeck, in charge of taxonomic investigations, U. S. Bureau of Entomology, who has sent me many Eriophyids.

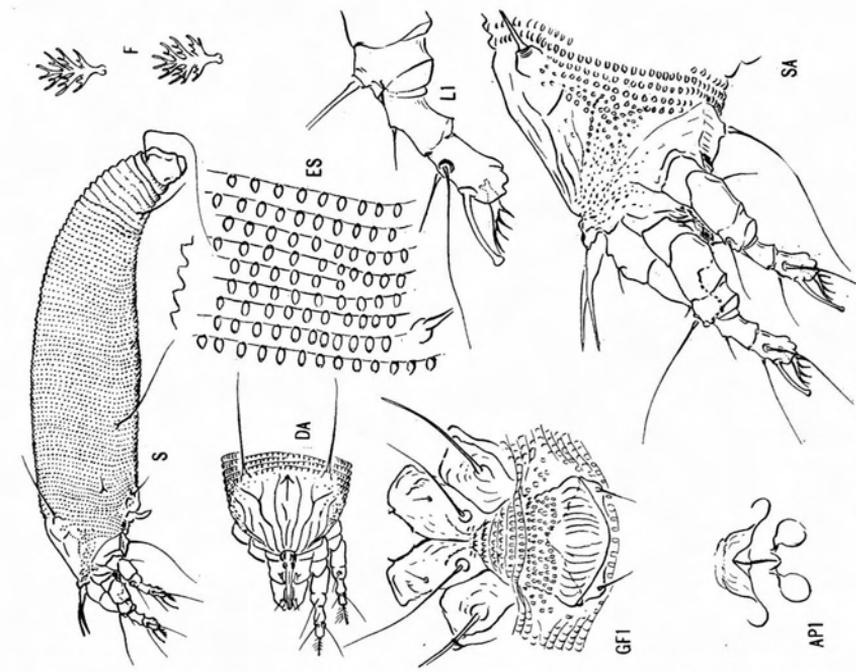


Plate 137, *Eriophyes sucezei* K., n. sp.

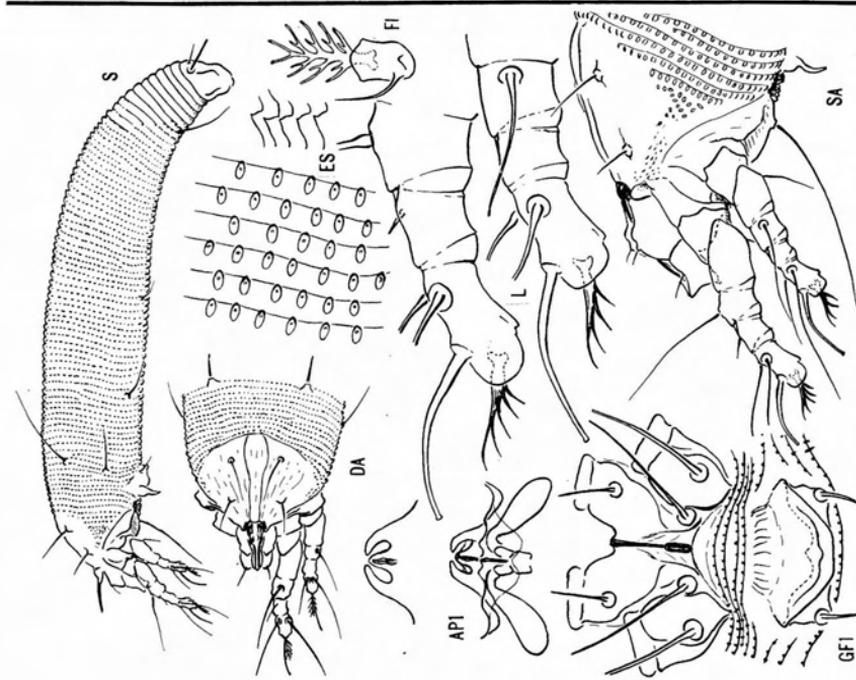


Plate 136, *Phytoptus avellanae* Nal.

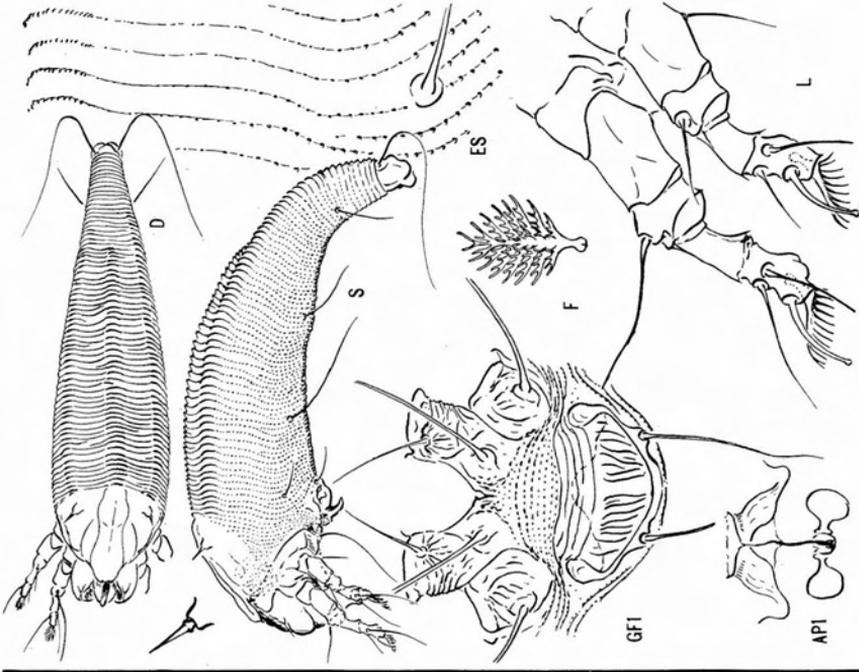


Plate 139, *Catepitrimerus musebecki* K., n. sp.

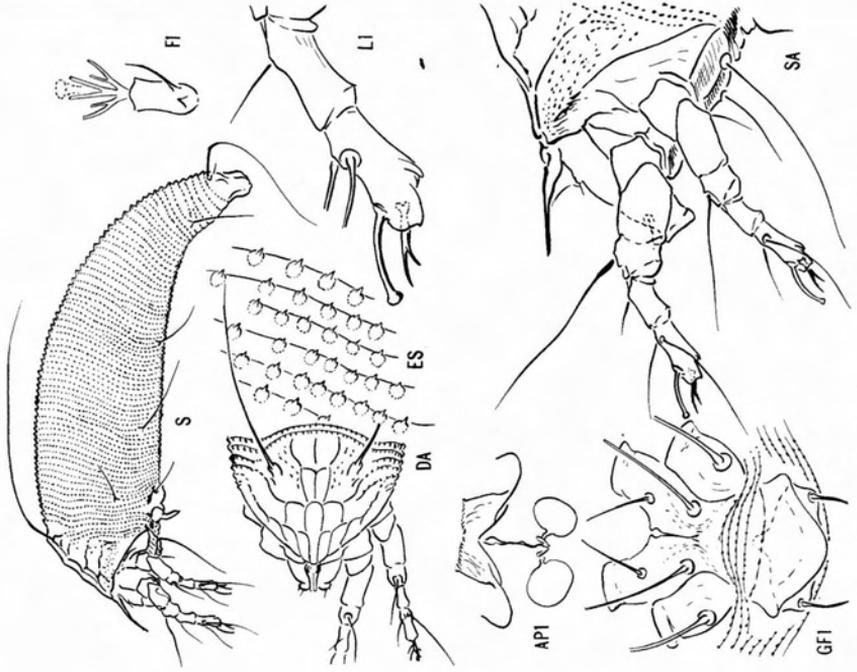


Plate 138, *Phyllocoptes catalmi* K., n. sp.

HOST LIST**BETULACEAE**

- Corylus avellana* L., Filbert
Phytoptus avellanae Nal., causing big-bud.

ULMACEAE

- Ulmus* (*campestris* L.?), Elm
Phyllocoptes calulmi n. sp., undersurface vagrants.

LAURACEAE

- Persea americana* Mill., Avocado
Calepitrimerus mucsebecki n. sp., vagrants?

EBENACEAE

- Maba sandwicensis* A. DC
Eriophyes swezeyi n. sp., small, white underside wart galls.

DESIGNATIONS ON PLATES

- AP1** Interior female genitalia
D Dorsal view of mite
DA Dorsal view of anterior section of mite
ES Detail of side skin
F Featherclaw from below
F1 Featherclaw and part of tarsus
GF1 Female genitalia and coxae
L Left legs
L1 Left foreleg
S Side view of mite
SA Side view of anterior section of mite

